IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with <u>underlining</u> and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 4, 12, 15, and 16 and ADD new claims _______ in accordance with the following:

1. (Currently Amended) A method of monitoring an optical signal to noise ratio, comprising:

~~measuring~~ <u>storing an initial value of</u> a degree of polarization of an optical signal transmitted in an optical transmission system;

~~storing an initial value of~~ <u>measuring a value of</u> said degree of polarization of said optical signal <u>after a predetermined amount of time has elapsed from a time when said initial value was stored</u>; and

determining a change amount in an optical signal to noise ratio of said optical signal according to a change ~~amount in time~~ of ~~a~~ <u>said</u> measured value of said degree of polarization relative to said stored initial value<u>, wherein</u>

<u>said predetermined amount of time is set to measure the change in said degree of polarization due to a change in the optical signal to noise ratio, when a change in said degree of polarization due to a change in a polarization mode dispersion is compensated</u>.

2. (Cancelled).

3. (Previously Presented) A method of monitoring an optical signal to noise ratio according to claim 1, wherein when the measured value of said degree of polarization exceeds said initial value, the measured value is set as said initial value.

4. (Currently Amended) An optical transmission system in which an optical signal is transmitted from an optical transmission apparatus to an optical receiving apparatus via an optical transmission path, comprising:

a degree of polarization measurement section that measures a degree of polarization of said optical signal; and

an optical SNR calculation section that stores an initial value of said degree of polarization of said optical signal, and determines a change amount in an optical signal to noise ratio of said optical signal according to a change ~~amount in time of~~ between a measured value of the degree of polarization obtained in said degree of polarization measuring section relative to said stored initial value, wherein

said degree of polarization measurement section that measures said degree of polarization of said optical signal after a predetermined amount of time has elapsed from a time when said initial value was stored, and

said predetermined amount of time is set so that said degree of polarization measurement section to measure the change in said degree of polarization due to a change in the optical signal to noise ratio, when a change in said degree of polarization due to a change in a polarization mode dispersion is compensated.

5. (Original) An optical transmission system according to claim 4,

wherein said degree of polarization measurement section measures the degree of polarization of an optical signal propagated through said optical transmission path to be input to said optical receiving apparatus.

6. (Original) An optical transmission system according to claim 4, further comprising;

at least one optical repeater on said optical transmission path,

wherein, when an optical signal sent from said optical transmission apparatus is transmitted through a plurality of repeating intervals to be received by said optical receiving apparatus,

said degree of polarization measurement section measures the degree of polarization of at least one optical signal among an optical signal output from said optical transmission apparatus, each optical signal propagated through each repeating intervals and an optical signal input to said optical receiving apparatus.

7. (Previously Presented) An optical transmission system according to claim 4, wherein, when a wavelength division multiplexed light containing a plurality of optical signals with different wavelengths is transmitted,

said degree of polarization measurement section measures the degrees of polarization of optical signals of respective wavelengths contained in said wavelength division multiplexed light,

and

said optical signal to noise ratio calculation section determines change amounts in optical signal to noise ratios corresponding to respective wavelengths by using measured values of the degrees of polarization obtained by said degree of polarization measurement section.

8. (Original) An optical transmission system according to claim 7,

wherein said degree of polarization measurement section and said optical signal to noise ratio calculation section are provided in plural number for each of the optical signals of respective wavelengths contained in said wavelength division multiplexed light.

9. (Previously Presented) An optical transmission system according to claim 7, further comprising;

a selection section that selects one optical signal from the optical signals of respective wavelengths contained in said wavelength division multiplexed light,

wherein said degree of polarization measurement section measures the degree of polarization of an optical signal selected by said selection section, and

said optical signal to noise ratio calculation section determines a change amount in an optical signal to noise ratio of the optical signal selected by said selection section, by using the measured value of the degree of polarization obtained by said degree of polarization measurement section.

10. (Original) An optical transmission system according to claim 9, wherein said selection section includes

a demultiplexer demultiplexing said wavelength division multiplexed light according to wavelength, and

an optical switch selecting one optical signal out of the optical signals of respective wavelengths demultiplexed by said demultiplexer to feed it to said degree of polarization measurement section.

11. (Original) An optical transmission system according to claim 9,

wherein said selection section includes a variable wavelength optical filter extracting an optical signal of one wavelength from said wavelength division multiplexed light, to feed it to said degree of polarization measurement section.

12. (Currently Amended) An optical transmission system, comprising:

an automatic polarization mode dispersion compensation apparatus including

a polarization mode dispersion compensator compensating for polarization mode dispersion generated in said optical signal,

a degree of polarization measuring device measuring the degree of polarization of an optical signal whose polarization mode dispersion has been compensated by said polarization mode dispersion compensator, and

a control circuit controlling a compensation amount in said polarization mode dispersion compensator, based on a measured result of said degree of polarization measuring device; and

an optical signal to noise ratio calculation section which determines a change amount in an optical signal to noise ratio of said optical signal, by using the measured value of the degree of polarization obtained by the degree of polarization measuring device in said automatic polarization mode dispersion compensation apparatus ~~at different times~~ after a predetermined amount of time has elapsed from a time when said initial value was stored, the predetermined mount of time being set to ensure that that the polarization measuring device measures the change in said degree of polarization due only due to a change in the optical signal to noise ratio, while a change in said degree of polarization due to a change in a polarization mode dispersion is compensated.

13. (Previously Presented) An optical transmission system according to claim 4, further comprising;

a control section controlling power of an optical signal output from said optical transmission apparatus, based on the optical signal to noise ratio determined by said optical signal to noise ratio calculation section, so that the optical signal to noise ratio of the optical signal received by said optical receiving apparatus is a previously set value.

14. (Previously Presented) An optical transmission system according to claim 13, wherein, when a wavelength division multiplexed light containing a plurality of optical signals with different wavelengths is transmitted,

said control section performs a pre-emphasis control of the optical signal power of each wavelength output from said optical transmission apparatus, based on the change amount in the optical signal to noise ratio corresponding to each wavelength determined by said optical signal to noise ratio calculation section.

15. (Currently Amended) A method of monitoring a signal to noise ratio of a signal transmitted in an optical system, comprising:

determining a change amount in the signal to noise ratio of the optical signal based on a difference between a measured value of a degree of polarization of said optical signal at a time when the change in the degree of polarization due to a polarization mode dispersion is compensated~~different times~~ and an initial value of the degree of polarization.

16. (Currently Amended) A method of monitoring a signal to noise ratio of a signal transmitted via an optical fiber, comprising:

correcting a received signal by compensating for a polarization mode dispersion of the signal along the optical fiber;

splitting a part of the signal which has been corrected for polarization mode dispersion; and

measuring a degree of polarization of the part of the signal at different times, and comparing the measured degree of polarization with a reference value of the degree of polarization to monitor a change of the signal to noise ratio based on a change of the measured degree of polarization, wherein

if the measured degree of polarization exceeds the reference value, the reference value is set equal to the measured degree of polarization, and

the measured degree of polarization is also used to control the compensating for the polarization mode dispersion.